PREPARING FOR PRACTICE

UNIVERSITY OF QUEENSLAND
ST LUCIA CAMPUS

JULY 5 – 7 2009

Handbook for Delegates
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- Personal attributes of veterinary support staff: What do our veterinary clients value?
- Vertical integration of content in a professional practice curriculum
- PBL in an Australian Veterinary Science Curriculum
- Introducing Client Simulations into the Veterinary Curriculum
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PROGRAM

SUNDAY 5TH JULY

1.30 pm – 5.30 pm
Optional tour of Gatton Campus; including Centre for Advanced Animal Studies and construction site for new UQ School of Veterinary Science

6:30pm – 8.30 pm
Welcome drinks & canapés, and registration at The Marque Hotel, George St, Brisbane

MONDAY 6TH JULY

8:00 am – 8:45am
Coffee & registration

8:45 am – 9:00am
Welcome - Professor Debbie Terry, Deputy Vice Chancellor (Academic), University of Queensland

MORNING SESSION – ENHANCING COMMUNICATION & LIFE SKILLS IN VETERINARY STUDENTS (Chair, Jennifer Mills)

9:00 am – 10:00am
Keynote address; Lights, Camera, Action: perspectives from behind the lens
(Dr Jane Shaw, Director, Argus Institute, College of Veterinary Medicine and Biomedical Sciences, Colorado State University).
Topics relating to Advances in Teaching Relational Medicine

10:00am – 10:50am
Curriculum Development and Assessment of Methods to Enhance Communication and Life Skills in Veterinary Students – news from an ALTC project
(Dr Jenny Mills, Murdoch; Dr John Baguley, Sydney; Dr Michael Meehan, UQ)

10:50 am – 11:10 am Morning tea (Posters)

11.10 am – 11.30 am
Employer’s strategies for evaluating competencies of potential employees.
(Dr Mark Stallwood, Stallwood Consulting Services)

11:30 am – 1:00pm
Workshop led by Dr Jane Shaw

• From Paternalism to Partnership: Shared Decision Making

1:00 pm LUNCH (UQ Staff Club)

2:00 – 3:30 pm SUBMITTED PAPERS (15 min each, including questions)

The Changing Face of Veterinary Medicine (Marie-France Boissonneault* and Elizabeth Stone – Ontario Vet College)

How do male and female senior veterinary students describe their veterinary role models? (Dan Schull*, Greg Kyle, Glen Coleman and Paul Mills – UQ)

Incorporating simulated consultations and reflective practice into a first year professional practice programme (Susan Matthew, University of Sydney)

Use of proprietary materials to teach veterinary communication skills (Susan Matthew, University of Sydney)

Development of online SBLi scenarios for teaching Ruminant Medicine and Production (Viv Perry and Carl Hockey – University of Queensland)
3:30 – 5:00 pm TOUR OF SKILLS DEVELOPMENT CENTRE
Bus departs UQ venue at 3:30, tour from 4:00 to 5:00pm, then bus drop off in city.

CONFERENCE DINNER
Vino’s Bar and Restaurant
TUESDAY 7 JULY

8:30 am Coffee

MORNING SESSION – OUTCOMES ASSESSMENT (Chair, Assoc Prof Rosanne Taylor)

9:00 am – 9:15 am
Personal attributes of veterinary support staff: What do our veterinary clients value? (Trish Clarke, University of Queensland)

9:15 am – 9.30 am
Trevor Heath

9.30 am – 10.00 am
Assessment of graduate attributes: report from the National Graduate Attributes project, and lessons for veterinary science. (Dr Clair Hughes, Teaching and Educational Development Institute, UQ)

10.00 am – 10.30 am
Outcomes assessment in medical students (Drs Jennifer Fitzgerald and Jennifer Schafer, School of Medicine, UQ)

10.30 am – 11.00 am Morning tea (Posters)

11.00 am – 11.20 am
Australian Veterinary Dean’s working group on outcomes assessment (Assoc Prof Rosanne Taylor, University of Sydney)

11.20 am – 12.00 pm
Expert panel discussion/wrap-up on outcomes assessment and communication and life skills

12.00 pm – 1.30 pm Submitted Papers (15 minutes each, including questions)

  - Firehouse Animal Hospital Project: Communication Skills Education and Outcomes Assessment (Jane Shaw, Colorado State University)
  - Developing an outcome-based veterinary curriculum (Emma Rowe – University of Adelaide)
  - Use of a self-assessment checklist to determine the impact of final year clinical rotations on veterinary science student perceptions of "day one competence" (Dan Schull*, John Morton, Glen Coleman and Paul Mills – UQ)
  - Embedding orientation and leadership activities in disciplinary teaching (Imke Tammen, University of Sydney)
  - Work integrated learning: opportunities for reflection (Christine Hawke, University of Sydney)
  - Student-identified factors for veterinary career success (Martin Cake, Jenny Mills and Melinda Bell – Murdoch University)

1:30 pm LUNCH (UQ Staff Club)

AFTERNOON SESSION – SUBMITTED PAPERS & DRINKS

2.30 pm – 4:30 pm Submitted papers (15 minutes each, including questions)

  - Determining the effectiveness of an interactive communication skills and human-animal bond workshop in final year veterinary students (Michael Meehan*, D Schull, N Pachana, B Watson, G Coleman, University of Queensland)

  - Teaching on the Run (Melinda Bell – Murdoch University)
Silver Screen Practitioners: An Examination of Veterinarians in Fiction Films (Marie-France Boissonneault and Elizabeth Stone – Ontario Vet College)

**Vertical integration of content in a professional practice curriculum** (John Baguley, University of Sydney)

**PBL in an Australian Veterinary Science Curriculum** (Jennifer Hyams – Charles Sturt University)

**Introducing Client Simulations into the Veterinary Curriculum** (Jenny Mills, Murdoch University)

**Transition to Practice** (Eric Allan, Charles Sturt University)

**Approaches to help veterinary students develop better mental constructs of epidemiological concepts** (John Morton, University of Queensland)

*4:30 pm – 5:30 pm Close and drinks*
Invited Speakers

JANE SHAW

Jane R. Shaw, DVM, PhD is a recognized expert in veterinarian-client-patient interactions. Her dissertation was the first scientific study of veterinarian-client-patient communication and her publications focus on the analysis of videotaped conversations between veterinarians and their clients and animal patients. Of interest is studying the relationship between communication and clinical outcomes for veterinarians, clients and patients, including satisfaction, adherence and patient health.

Dr. Shaw is an Assistant Professor of Veterinary Communication and the Director of the Argus Institute at Colorado State University. Dr. Shaw received her veterinary degree from Michigan State University in 1994 and received her PhD in Epidemiology at the University of Guelph in Ontario, Canada in 2004. Dr. Shaw was selected as the recipient of the 2008 Bustad Award, recognizing her contributions to enhancing the relationship between people and their pets.

Dr. Shaw implements the communication curriculum at Colorado State University, focusing on clinical interviewing skills to enhance professional performance through partnership with colleagues and clients. She serves on the advisory committee for the International Conference on Communication in Veterinary Medicine. Dr. Shaw is called upon internationally and nationally to conduct skills-based communication workshops at veterinary conferences and symposia. She consults with veterinary practices to enhance teamwork, continuity of care and client service.

MR KIM WHITTLESTONE

Kim Whittlestone, BVetMed MRCVS, is Senior Lecturer in Independent Learning at the Royal Veterinary College (RVC), London. His career started as a veterinary surgeon at Bristol. He has explored the impact of technology in veterinary and medical education and helped establish the Centre for Applied Research in Educational Technologies at the University of Cambridge in 2001. Kim is particularly interested in how students approach their learning and how their teachers, peers and emerging technologies, influence this approach.

MARK STALLWOOD

Mark Stallwood, BVSc, MBA, Dip Pract. Management, Cert IV Workplace Training and Assessing, was a practising veterinarian and business owner for 20 years. During this time he also held positions as both local and state president of the Australian Veterinary Association, and was a member of national working parties on practice management and veterinary nurse education. A burgeoning interest in management led to the completion of a Masters degree in 1997.

Mark was the executive officer of the AVPMA from 2002 until 2007; and in 2008 helped establish the Australian Veterinary Business Association and was the founding CEO of that organisation. He resigned in March, 2009. After several years involvement with the Diploma of practice management program, Mark accepted the position of Academic Director, practice management at University of New England Partnerships in 2007; a position he continues to hold. He is responsible for academic standards and teaching across the veterinary, medical, dental and legal practice management streams.

He has also taught small business management and a variety of subjects in the marketing and retail fields. Mark’s professional interests include the role of business management in professional practice, computers in small business and occupational workplace health and safety in veterinary practice.
CLAIR HUGHES

Clair Hughes is a Lecturer in Higher Education in the Teaching and Educational Development Institute (TEDI) at the University of Queensland (UQ). Assessment has been a major focus of her work for a number of years for which she has been awarded UQ (2007) and Australian Learning and Teaching Council (ALTC) (2008) Citations. She is currently engaged in an ALTC funded project to scope the embedding of graduate attributes in curriculum and assessment (The National GAP) with colleagues from the University of Sydney and Griffith University.
Invited Speakers

“Lights, Camera, Action: Perspectives from behind the lens”

Jane Shaw  
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For 40 years, medical researchers have been studying physician-patient interactions and a wealth of information has been gathered on physician-patient communication and its relationship to important medical outcomes. Many of these lessons were gleaned through analysis of videotaped interactions. In the past decade, communication has gained recognition and importance in veterinary medicine. A clear focus on interpersonal interactions in veterinary medicine is essential to the ongoing evolution of the profession to preserve the relationship between veterinarians, clients and their patients. Observing veterinarian-client-patient interactions is integral to this growth. This presentation will share perspectives on what we have learned so far from behind the lens and shine the light on future directions on where we need to go from here.
Curriculum Development and Assessment of Methods to Enhance Communication and Life Skills in Veterinary Students: News from an ALTC Collaborative Project

Jennifer N Mills BVSc, MSc, PhD
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Dr Michael Meehan BVSc, B Psych (Hons)
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During 2008 and 2009, staff from Murdoch University, The University of Queensland and The University of Sydney have been involved research sponsored by the Australian Learning and Teaching Council focused on enhancing communication and life skills in veterinary students. These skills have been nominated by employers as important graduate attributes and are considered crucial to overall success in veterinary professional life. (Coleman, Salter & Thornton 2000; Heath & Mills 1999; Heath & Mills 2000). This presentation will review findings of this research from each of the collaborating institutions.

As communication is closely linked to an individual’s sense of identity and levels of confidence, educational instruction in this topic involves risks and differs substantially to traditional medical sciences. The approach requires an understanding of emotional intelligence (defined as self-awareness, self-management, social awareness, social management and empathy.) Emotional intelligence is believed to be both measurable and teachable and involves awareness of emotional states in oneself and others and the ability to use this awareness to manage relationships with others.

This collaborative study sought to inform the emerging veterinary communication curriculum through developing clinical consultations using simulated client scenarios based on Calgary Cambridge guides, addressing the human-animal bond, assessing student needs and their attitudes to animals, and developing strategies to enhance and report life skills (including e-portfolio). Following, is a brief summary of the main objectives for each of the institutions.

**University of Sydney**
The University of Sydney component of this project focused on development communication and life skills through application of emotional intelligence theory (Goleman 1998; Ruby & DeBowes 2007; Jensen et al. 2008) with projects specifically designed to improve self awareness, social awareness, self management and relational competence. These projects included surveying students’ attitudes towards animals, the development of online consultation simulations, and the creation of opportunities for reflection linked to a work integrated learning program.

**University of Queensland**
Research at The University of Queensland focused on developing an enhanced, clinically applicable understanding of the human-animal bond in veterinary students. This was achieved through (a) investigating how the strength of client-animal bonding influences client expectations of communication within a veterinary consultation; (b) developing on-line modules and experiential learning tasks to build students’ knowledge, skills and aptitude in evaluating the human-animal bond and helping students learn how to use such knowledge clinically; and (c) evaluating the effects of teaching an elective human-animal bond and communication skills program/workshop to final year veterinary students.

**Murdoch University**
Research at Murdoch University involved using structured simulation case scenarios of veterinarian-client interactions; the creation of a set of assessment rubrics for enhancing veterinary consultation skills based on Calgary Cambridge guides (Silverman, Kurtz & Draper 2005); the creation of instructional material to develop specific life skills such as critical
incident analysis, expressions of empathy and self-reflection; the development of an electronic portfolio facility for reflection and showcase purposes; and the development of a ‘Train the Trainer’ workshop module to assist in consultation training.

Outcomes of the Project:
The study found that experiential tasks help first year students identify the importance of communication for success in veterinary life. Client simulations can be successfully introduced into the curriculum at various levels compatible with students’ level of medical knowledge. As few as two client simulations with final year students increased student confidence in communication. These simulations required negotiating a mutually acceptable management plan with the client and most involved specific communication tasks not previously experienced, such as breaking bad news. A workshop introducing client consultations, clinical examination and using simulated clients was successfully introduced into 3rd year.

Empathy is recognised as an important communication skill and has been introduced in tutorials involving challenging scenarios. Confidence in expressing empathy was significantly lower in males than females. Proportionally more males worked on this skill; despite this effort, the level of increase in confidence in males was significantly lower than that of females. This suggests empathy should be introduced early in the curriculum to provide time to develop proficiency.

The human-animal bond is recognized as a key component in veterinary consultations. This study demonstrated a successful method to incorporate training for students to recognize, acknowledge and support the human-animal bond in client consultations. A specific training module was developed and is available on the Bayer Animal Health website.

A survey of students’ attitudes to animal welfare demonstrated gender differences to a variety of situations and animal species. Age, university, nationality, and location of childhood development also explained some differences in perception of animal sentience. Gender, age and year of study also affected empathy scores. This information may assist students develop greater awareness of the impact of attitudes to animal welfare on relational competence. Gender differences were identified in other aspects of consultation (confidence to handle multiple problems; clients’ perception of competency and conflict in clients’ attitudes to euthanasia).

Evidence of communication and life skills can be incorporated into an e-portfolio. Trial with the Blackboard module was not highly successful and technical difficulties were discovered; only one student completed a showcase portfolio. However, this trial demonstrated the benefits of e-portfolio to student learning and led the way for a more extensive trial using another product.

The study has enhanced educator collaboration and progressed learning in veterinary communication and life skills, with some very positive unexpected outcomes which will extend these attributes into the wider veterinary community.

(references over page)
**References**


**Acknowledgement**

Support for this report has been provided by the Australian Learning and Teaching Council (ALTC). The views expressed in this presentation do not necessarily reflect the views of ALTC.
Employer's strategies for evaluating competencies of potential employees.

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mark@stallwoodconsulting.com.au

Veterinary practice is similar to most small businesses in Australia. Recruitment of staff is undertaken by either business owners or senior members of the management team who have no training in human resource management. The majority of candidates are selected based upon the presentation of a résumé and a face to face interview.

Face to face interviews are unreliable at predicting performance, particularly when the skill set involved is a highly complex one. Employers rely upon an empirical judgement of people skills based upon the candidates presentation and response to series of standardised questions. Often, the questions are not framed in terms of the accepted behavioural based questioning techniques used by recruitment specialists, but are focused around trying to “get to know the candidate” and assess how well they will fit into the organisations culture. Some practices now ask a short listed candidate to present for one to two days work to try and assess professional competency through observation.

The tight labour market which has favoured employees, and as a result employers have been in the position of having no choice in the selection of a new staff member and have often employed a candidate who has proven not to be a good fit for the position.
Portfolios in veterinary education: Reflections from a small island

Kim Whittlestone
Royal Veterinary College
kwhittlestone@rvc.ac.uk

Abstract

Providing Higher Education students with opportunities for Personal Development Planning (PDP) became a requirement in the United Kingdom in 2005 (QAA, 2000). In response to this, the Royal Veterinary College (RVC) in London introduced an electronic portfolio supported by face-to-face tutorials. This approach offers students the opportunity to work in small groups, discussing and reflecting upon their experiences in the veterinary course and planning their future development needs. Students reported positively on the tutor system, but the online portfolio was less well received. Over the past three years, following the formation of the only Veterinary focused Centre for Excellence in Teaching and Learning at the RVC (knows as the Lifelong and Independent Veterinary Education Centre or “LIVE”), we have been researching enhancements to the online reflective diary. In this paper we outline the challenges in the successful development and implementation of an online portfolio system for veterinary education. Our research and the recent literature in this area has helped to define some key principles for effective introduction of portfolios to enhance students’ learning, and support their development as professional, reflective veterinary practitioners.

Introduction

In May 2000, following a national consultation process, the United Kingdom’s Quality Assurance Agency (QAA - http://www.qaa.ac.uk/) published “A policy statement on a progress file for Higher Education” (QAA, 2000). This policy was based upon recommendations from the National Committee of Inquiry into Higher Education (Dearing, 1997) and a document titled “Guidelines for HE Progress Files” was published shortly afterwards (QAA, 2001) giving institutions until 2005 to provide students with progress files that contained both of the following:

- a transcript or record of an individual’s learning and achievement, provided by the institution,
- an individual's personal record of learning and achievements, progress reviews and plans that are used to clarify personal goals and can provide a resource from which material is selected to produce personal statements and CVs for employers, admissions tutors and others.

This second component of the progress file became known as the “Personal Development Plan” (PDP) but many institutions saw similarities between the functions of the PDP and a portfolio resulting in the terms becoming almost interchangeable.

In response to this policy, the Royal Veterinary College (RVC) developed a system called “My Portfolio” during 2004-5 that allowed students to create entries in a learning diary using an online form and to optionally share these entries with their tutor group and tutor. Face-to-face meetings of the group with the tutor were scheduled each term and before every meeting, a request to create and entry in the portfolio was sent out to all students. The portfolio page in the VLE was titled “Professional Development Planning (PDP)” and within a few months the new system (online plus face-to-face) became known as the PDP.

Whilst many students and tutors valued the opportunity to meet for small group discussions, the entries in the PDP were rather sparse and where present, tended to be descriptive rather than reflective or focused on action planning.

“I made a lot of detailed notes on everything that was covered on the multiple lectures. One of the reasons is I didn't fall asleep, woohoo! Also I listened to the lecturer and noted down anything that wasn't on the handout which was quite a few things.” (First year student’s PDP entry)

As a result of the limited update by students many began to question the purpose and value of the PDP and in some cases developed a severe aversion to it even being mentioned.
Early in 2006, shortly after the formation of the Lifelong and Independent Veterinary Education Centre (LIVE), we started developing and researching an online environment specifically for clinical veterinary students that would allow them to record, organise, access, share and reflect on their clinical experiences. We deliberately kept this system separate from the PDP to avoid any confusion, calling the online environment “myPad”. myPad was built with smartphone access in mind, having secured sponsorship from Orange Personal Communications Services Ltd. (http://www.orange.co.uk/). The prototype system was kept very simple and students’ requirements were incorporated into the emerging design. Their responses to the developing system were regularly monitored through data logs, email requests for feedback, as well as by interview and focus groups (Whittlestone, Bullock, Pirkelbauer, & May, 2008). Further development of the system during 2008 and 2009 built on the lessons learned in the early prototypes (Whittlestone, 2009). We renamed the system “VetConnect” to take account of its main purpose in connecting students and staff together.

Purpose of a portfolio

“Simple, clear purpose and principles give rise to complex and intelligent behaviour. Complex rules and regulations give rise to simple and stupid behaviour.” Dee Hock, CEO and founding member VISA

Absolute clarity about the purpose of a portfolio is tremendously important in ensuring that everyone understands what is expected of them and engages in the process from the beginning (Pitts, 2007). The policy published by the QAA required all HE institutions to initiate a PDP. They attempted to provide a clear statement of the purpose this would serve in their guidelines document in 2001 (totaling 30 pages), describing both the student transcript and the PDP. This was subsequently extended in 2009 (now four years after the implementation deadline) in an attempt to provide institutions with further guidance on the PDP (totaling 18 pages). Below are the primary objective paragraphs from each of these documents:

“The primary objective for personal development planning is to improve the capacity of individuals to understand what and how they are learning and to review, plan and take responsibility for their own learning.” (QAA, 2001 p. 9)

“The primary objectives of PDP are to enhance the capacity of learners to reflect, plan and take responsibility for their own learning and to understand what and how they learn. PDP is based on the skills of reflection and planning which are integral to knowing how to learn in different contexts and to transfer that learning throughout life.” (QAA, 2009 p. 7)

The online RVC “My Portfolio” system attempted to cover these primary objectives as well as incorporating professional development by introducing the system to students under the heading “What is Professional Development Planning (PDP)?”

“Professional Development Planning is all about you. It is about your development through and beyond your degree. It is about your learning at university and developing as a student and it is about leaving university and developing as a professional in your field.

My Portfolio is a place for collecting evidence about what you can do and how you have developed over a period of time. It is not necessarily the only place for reflecting on your learning but it is a useful tool for collecting those reflections and choosing to share them with others. This formalises the reflection and enables you to use it as evidence of your learning and development. It is also a place for organising yourself and your learning. You can make action plans leading from your reflection or from comments given by your tutor or colleagues.”

While most would agree with the concepts behind these ideas, it is perhaps not surprising that many RVC staff (who had not experienced PDP or portfolios in their own education and had not read and reflected upon the 48 pages of QAA guidelines) were a little uncertain of how to best support students in carrying out these tasks.

In fact, the RVC was not alone. Many institutions in the UK faced difficulties in understanding the purpose of the PDP and developing implementation strategies for it. This was in part due to the multiple meanings and functions of the PDP scattered through the QAA guidelines (Buckley, 2008; Clegg, 2004) that included:
• improving students’ understanding of how they are learning,
• enabling students to reflect critically,
• helping students become independent learners,
• encouraging students to build on their academic work, extracurricular activities and career opportunities,
• students’ general employability.

While these are all laudable aims, to be effectively implemented almost every one of them involves a thorough grasp of educational theory and practice, something that even educational researchers have been grappling with for decades (N. J. Entwistle & Peterson, 2004).

When we started our own research at LIVE, our aim was to enhance students learning in the clinical environment by enabling them to record their clinical experiences so that they could (i) refer back to these experiences easily, (ii) reflect on these experiences and (iii) monitor their progress towards achieving day one competencies (RCVS, 2002; RVC, 2007). This kind of approach holds tremendous promise for shifting the responsibility for learning from the teacher to the learner and, as John Biggs eloquently outlined, this is important in terms of effective learning as what the student does is far more important than what the teacher does (Biggs, 1999). This is not to say that the teacher has no role to play, but in this approach to using a portfolio, students are supported by the teacher and empowered to select evidence of the quality of their learning as set out by objectives that they or the teacher have defined (Biggs, 1997).

In essence, our approach would match with the “Cake Mix” variety of portfolio (as described by Webb, et al., 2002; see Table 1).

Table 1: Models of portfolios in common use (Webb, et al., 2002)

<table>
<thead>
<tr>
<th>Shopping trolley</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used to collect anything that could be seen as a vehicle to learning. The choice is limited only by what the student considers to be appropriate. There are rarely any linking strategies between components.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Toast rack</th>
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</thead>
<tbody>
<tr>
<td>Contains a number of pre-determined “slots” that must be filled for each module of a programme, e.g. action plans, reflective accounts of significant events, skills checklists. Each component is formally assessed in isolation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cake Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students are expected to provide evidence to demonstrate that they have achieved their learning outcomes whilst on placement. To achieve this “mixing”, they provide reflective commentaries addressing analytical criteria. In short, whilst there is a collection of individual ingredients, what emerges as the “cake” at the end of the process is more than the sum of the parts.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spinal column</th>
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<tbody>
<tr>
<td>A series of competency statements form the central column of the portfolio and students collect evidence to demonstrate their achievement against each competency. One piece of evidence may be used against multiple statements.</td>
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</tbody>
</table>

However, unless learning outcomes are clear, there is a danger that the “Cake mix” might turn into a “Shopping trolley” where students collect anything and everything without creating any linkages, or perhaps worse, an empty “Shopping trolley” because they can’t quite decide what is useful or important enough to collect.
Being clear about the ultimate outcome of the portfolio and communicating this to students is therefore important. Pitts describes six purposes of portfolios that have been identified in the literature (Pitts, 2007):

1. Continuing professional development
2. Enhanced learning
3. Assessment
4. Evaluation
5. Certification and re-certification
6. Career advancement

Tomkinson suggests a taxonomy for the development of portfolios (see figure 1) providing a series of dimensions that allows stakeholders to discuss and agree where the portfolio should be placed on each of these (Tomkinson, 1997).

<table>
<thead>
<tr>
<th>Dimension of Portfolio</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Style</td>
<td>Descriptive</td>
</tr>
<tr>
<td></td>
<td>Reflective</td>
</tr>
<tr>
<td>Structure</td>
<td>Informal</td>
</tr>
<tr>
<td></td>
<td>Formal</td>
</tr>
<tr>
<td>Scope</td>
<td>Narrow (e.g. teaching activity)</td>
</tr>
<tr>
<td>Purpose</td>
<td>Developmental (formative)</td>
</tr>
<tr>
<td>Confidentiality</td>
<td>Personal (closed)</td>
</tr>
<tr>
<td>Content</td>
<td>Focused (e.g. critical incidents)</td>
</tr>
<tr>
<td>Timing</td>
<td>Discrete</td>
</tr>
</tbody>
</table>

Figure 1: A taxonomy for the development of portfolios (adapted from Tomkinson, 1997)
(cited in Pitts, 2007)

These models, purposes and dimensions can be useful tools for agreeing on and developing portfolios but there are further challenges to be faced in the implementation of whichever system is chosen.

**Reflection**

The major difficulty we faced at the RVC with implementation was centering the portfolio on reflective practice. Whilst most educational researchers and theorists would argue that reflective practice is the vehicle for learning effectively, especially in the development of professional practice (D. A. Schön, 1983; D. A. Schön, 1987), being able to reflect is not an innate ability and deeper levels of reflection are more difficult to achieve and are achieved less often (Kaufman & Mann, 2007). Although reflection is a skill that can be learnt, top-down enforcement has the potential to destroy this development. As Carina Buckley states in her literature review of the PDP implementation process:
“The central role of reflection in the PDP process has the admittedly ironic potential to create a formidable barrier to student progression, since it is not easy and even where learning and reflection had taken place, students may remain unable – or unwilling – to articulate it adequately” (Buckley, 2008)

Very few RVC teaching staff have been required to formally reflect on their own learning and some expressed uncertainty that actually logging reflections in a written form was necessary at all. For them, reflection is a tacit process that they have developed over many years as practitioners. Many of the fourth and final year students on the myPad project also struggled with the concept of reflection although for a few it became a transformative experience:

“I have tried as hard as possible to embrace reflective learning and feel largely that it’s worked for me (esp after task 2) but it has been much harder than Linda would have you believe to grasp! Maybe it’s because I haven’t done it much yet - but writing things up reflectively takes much longer than traditional methods and there’s an awful lot to record. I don’t feel I am quite there with reflective learning (I still don’t see that how a case makes you feel is relevant!) that said, I do ‘feel’ that the entries I have made reflectively I know very well, and it has undoubtedly made details stick in my mind better…

Understanding only comes with problem solving and memorising only with understanding. This all relates to Prof Mays lecture on clinical reasoning, the difference between novices and intelligent novices/experts and the way they think through cases. Obviously it takes time to become and expert, but I feel reflective learning can help one become an intelligent novice as opposed to a novice. I’d love to have had it from 1st clinical year.” Final year student myPad entry.

In our continued research with students involved in the VetConnect project we are piloting approaches that are much less apparent as reflective practice (we might even call them “subversive” although there is no malicious intent). We have found that many students do not want to learn about the theory behind reflection; they just want to be able to do it! We are asking students questions that have a direct relevance, meaning and perceived usefulness to their current activities and we are guiding them through developing their thinking in regard to these activities. For example, students who are just about to embark on an Extra Mural Studies (EMS) placement, are asked what they are hoping to get out of this placement and what approaches they might take to facilitate this when they arrive at the practice. When they return we can explore with them the effectiveness of these approaches and share with the group strategies that have helped students to engage with the veterinary surgeons. Through VetConnect we hope to be able to connect students with their peer group and their tutors whilst on EMS placements enabling social learning networks to form.

**Embedding portfolios**

We have already touched on linking reflective portfolio activity directly with existing activities that students are involved in. Whatever the purpose of the portfolio, our experience has been that its relationship to the curriculum and to other activities will impact significantly on the students’ engagement with it. Having an understanding of where the students are coming from can help in implementing a portfolio that is embedded in their understanding of the course.

Data collected recently at the RVC using the Approaches and Study Skills Inventory for Students (N. Entwistle, Tait, & McCune, 2000) demonstrated that around half of our students fit the category of “strategic learners” who are organized in their studying, manage their time well and are alert to assessment demands (Whittlestone & May, 2009). Figure 2 graphs this strategic approach by amalgamating the students who agree or disagree with the following statements:

- When working on an assignment, I’m keeping in mind how best to impress the marker.
- I look carefully at tutors’ comments on course work to see how to get higher marks next time.
- I keep in mind who is going to mark an assignment and what they’re likely to be looking for.
• I keep an eye open for what lecturers seem to think is important and concentrate on that.

Figure 2: RVC Student responses to strategic approach questions on the ASSIST questionnaire

Being alert to assessment demands is perhaps just another way of saying that students learn what you inspect, not what you expect (McLachlan, 2006). This implies that unless a portfolio is assessed, many students will not engage with it but this does not mean that the entire portfolio needs to be assessed. Smaller written assignments or presentations that build on and/or refer to portfolio items can be submitted for marking, thus reducing the assessment load (see Biggs, 1997 for further information).

This has created a problem in the research phase of our project, because we do not want to roll the portfolio out across a whole year or course until we are clear about effective approaches piloted on small groups. However, if we do not incorporate some assessment component, students will be less likely to engage. Our solution has been to use incentives such as food and drink to encourage involvement but, even with promises of enhanced learning, this has proved to be only partially successful and could bias our results.

Reference points
Another barrier to engagement with a portfolio is students’ preferences for courses that transmit information and their concept of learning as reproducing. When asked about their course and teaching preferences, almost all students state that they prefer courses and teaching based upon the transmission model of teaching (see Figure 3). This graph represents course and teaching preferences in relation to four questions which are scored on a five-point scale from “definitely like”, to “definitely dislike” and amalgamated into the “Transmitting information” scale:

• lecturers who tell us exactly what to put down in our notes.
• exams or tests which need only the material provided in our lecture notes.
• courses in which it’s made very clear just which books we have to read.
• books which give you definite facts and information which can easily be learned.
We were aware that students may well enter the veterinary course with a “tell me what I need to learn, and I will learn it” concept of higher education, but we did not expect that this would be sustained throughout the entire five-year programme. The results were similar (see Figure 4) when students were asked “When you think about LEARNING, what does it mean to you?” followed by the statements:

- Building up knowledge by acquiring facts and information.
- Making sure you remember things well.
- Being able to use the information you’ve acquired.

This data matches with the myPad research where we found that students were very positive about using the smartphones to access information, but much less positive about using the device to record their own activities. This correlates with their conceptions of learning as “building up knowledge by acquiring facts and information” but the result is that many of our students just did not see the value of recording their activities.

Students who did not use the myPad system very much reported all kinds of problems including the smartphone device being too slow, too small and/or too big, the battery not lasting long enough, and it not feeling right to use the device in front of clients. The students seemed to list any excuses they could think of not to engage! Analysing the data was initially very confusing, as at times it seemed to be internally inconsistent. How could a device be too big and too small at the same time?

However, at the very end of an interview with one student, the pieces of the jigsaw fell into place. His comment “Well the problem I have with paper is that my handwriting is so bad I
cannot read it when I go back to it” gave us an insight into the complexities of the decisions being made. We already knew that this student was dyslexic, but we hadn’t connected his enthusiasm for the system with his difficulty in reading his own handwriting. The smartphone also corrected his letter inversions and spelling mistakes. Suddenly it became clear that every student was making different comparisons resulting in different choices being made and different feedback being received.

We called this realisation the “Reference Point” and suddenly the data began to make sense. We had assumed that students would be happy using the smartphone keyboard to enter text as they were all competent text message senders. We had assumed that their skills in typing a text message on a numeric keypad would make typing a portfolio entry using the small QWERTY keyboard on the smartphone much easier. There were at least two errors in this assumption:

- Text messaging fulfills a very specific niche function; that of communicating from one person to another in a way that is instantaneous for the sender but does not require an immediate response from the receiver. It can be done privately in a crowded room without fear of the conversation being “overheard” and it feels personal. These attributes of text messaging result in a perception by the user that the effort of typing on a small keyboard is worth the return. The user is making a comparison between what they are doing now and other ways of fulfilling the same function and although texting is a labourious process, as there is no real alternative the “gain” outweighs the “pain” (and hence text messaging became surprisingly popular).

- Most students did not use text messaging as their Reference Point for entering text in the portfolio; they compared it with a paper notepad and the notepad came out on top. Paper was quicker, easier and more socially acceptable and these positive features out-weighed the benefits of electronic storage for most. The dyslexic student was also using the paper notepad as the reference point, but in his comparison the smartphone came out on top because of the advantage it brought him in correcting errors and subsequent readability.

The Reference Point also explained how students could report the device as being too small (if they were using a function that compared it to a laptop – such as typing or browsing the web) and too large (if they were comparing it to a mobile phone when they were deciding whether to take it with them on a particular activity).

The concept of the Reference Point also enabled us to predict the effect of certain portfolio functions on student behaviour. In developing VetConnect we looked specifically at what the students’ Reference Point would be for each design idea in an attempt to create a system that tipped the balance in favour of the return to the student for any particular effort they were making. In terms of learning this is difficult because of the students’ existing Reference Point of transmission of knowledge (although feedback and expert input may tip this balance if student’s can be persuaded to input something or ask a question).

However, other activities such as sharing images or video, or maintaining contact with other students or staff may well provide a big enough return for the investment, especially when individuals are isolated in a practice. Our current developments are building on these ideas to create a learning community of practice that is embedded in the curriculum across the entire course. There is a lot of enthusiasm for this approach but only time will tell if we can make the Reference Points work in everyone’s favour.

**Conclusion**

This paper has explored the recent literature on introducing portfolios into Higher Education and expanded this by adding findings from our research at the RVC. To be successful, a portfolio has to be clearly defined and embedded in the curriculum but there is more that has to be understood to successfully implement any educational innovation.

Our research surfaced the complex decision-making process that veterinary students undertake (mainly subconsciously) when selecting whether to adopt a particular approach or system. We called this the “Reference Point” and believe that the decisions students make in relation to their particular Reference Point for a specific activity are critical to the ultimate success or failure of a new approach.
Discovering the students’ Reference Points helped us to understand student behaviours and to design a portfolio that takes account of these. We hope that these concepts will help others who are attempting to introduce any kind of innovation in teaching and learning.

Acknowledgements
We are very grateful to all the students who so willingly participated in the myPad and VetConnect projects, filled in questionnaires, attended focus groups and interviews and responded to our many requests. We would also like to thank Orange Personal Communications Services Ltd. (http://www.orange.co.uk/) for providing the smartphones, data contracts and technical training and Niall Winters and Yishay Mor, London Knowledge Lab for choosing our students to carry out their Collaborative Mobile (CoMo) project funded by the Centre for Distance Education.

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References
The School of Medicine at The University of Queensland (UQ) is Australia’s largest medical school and aims to lead the way in innovative teaching and assessment. This presentation will report on the development and assessment of clinical skills in UQ medical students. Specifically, the Clinical Coaching and Clinical Communication Skills program for Years 1 and 2 of the graduate-entry course will be outlined, with particular attention given to assessment procedures. Formative and summative assessment includes observation, coding and tutor feedback for procedural skills, history-taking interviews, and consultations in which bad news is broken to standardised patients. Assessment procedures aim to serve the dual purpose of assessment (for academic records) and further skill development (through expert tutor feedback). Preparations for assessment activities for more than 400 students in each cohort will be discussed. The effectiveness of the School of Medicine’s Clinical Communication Skills program was acknowledged in an Australian Teaching and Learning Council Award in 2007.
Outcomes assessment has become a central element of accreditation for professional education, both in Australia and internationally. The Australasian Veterinary School Deans initiated a review of outcomes assessment to improve the processes and instruments used. Here we report the issues under consideration, plans and progress of the Outcomes Assessment Working Group.

Outcomes assessment is a process of self reflection undertaken to determine whether veterinary schools and their programs achieve their intended outcomes. While it is an accreditation requirement, with increasing expectations for the sophistication of the approaches undertaken, its fundamental purpose is to ensure veterinary schools continuously enhance the quality of all aspects of their operations (1). Veterinary schools define the distinctive nature of the goals for their programs and undertake a systematic process of gathering, reflecting upon and using evidence to determine if these have been achieved. They present evidence for the coherence, alignment, relevance, effectiveness of their activities. Quality is determined as fitness for purpose and schools need to determine not only have the desired outcomes been achieved, but also at what level, and how consistently. The Working Group is collecting information on the current tools used to evaluate the quality of education outcomes (e.g. student selection, quality of graduates, their clinical and scientific competency and employment) and the self-evaluation processes for ensuring schools reach their goals (e.g. through staff development, curriculum review, support of research quality). We will report on the methods considered most effective in driving quality enhancement and identify areas of deficit which would benefit from collaborative development.

References

Graduate attributes (GA) have received considerable attention in recent years as universities seek to renew and articulate their purposes. Though mapping initially dominated approaches to GA policy implementation, it is now widely accepted that the explicit embedding of GAs in assessment provides the strongest evidence of their achievement. The assessment of GAs has however, proved a complex and challenging business. Studies have suggested that the effectiveness of this undertaking is often limited by the influence of a range of diverse but interrelated factors. This presentation discusses the influential factors identified through a project funded by the Australian Learning and Teaching Council (ALTC) – the National GAP (Hughes & Barrie forthcoming: Barrie, Hughes & Smith 2008) and argues that the assessment of graduate attributes is unlikely to be resolved unless these factors are addressed at a systemic level.
The Changing Face of Veterinary Medicine

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While it has been argued that men and women differ in their professional personality in working environments, gender does not per se, determine nurturing abilities, the ability to attach or connect with other beings, emotional abilities, needs for achievement, or the ability to perform mathematically, verbally or to absorb and comprehend the written word (Tavris, 1992). However, gender differences do often lie within the expression of human emotions and communication styles (Tavris, 1992; Sonnert and Holton, 1996). The topic of gender roles in the veterinarian memoir was a very nuanced in many of the works examined. Albeit, a few of the memoirs made specific reference to the gender shift of veterinary medicine, while some of the earlier memoirs revealed the gender bias toward a preference for male practitioners in the field and the difficulties that many women faced in entering into a predominantly male dominated profession. However, the earlier fiction film representations of the female veterinarian and the more contemporary emergence of their portrayal is reflective of the dramatic gender shift that the profession has undergone in the past 20 years (Smith, 2002).
How do male and female senior veterinary students describe their veterinary role models?

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For students, excellent role models are inspirational, teach by example and incite admiration and emulation (Paice, Heard, & Moss, 2002). The use of teaching staff as role models for professional behaviour is considered to be a long-standing component of training for doctors (Paice et al., 2002). The same is also true for veterinary medical training, where, according to Heath (1992), the teacher occupies the central role as creator of the educational environment, as the presenter of material, as a model of desirable professional behaviour and as custodian of professional standards. So, what are the attributes of role models sought by veterinary students whilst training? Although well described in the medical field (Elzubeir & Rizk, 2001; Haghdoost & Shakibi, 2006; Paice et al., 2002; Wright, 1996; Wright et al., 1997; Wright et al., 1998), this question remains largely unexplored in the veterinary literature. This objective of this study was to explore the characteristics of veterinary role models as described by senior veterinary students in Australia. Final year students (2008) were asked to identify a veterinarian who had been a role model and describe, in approximately 100 words, why that individual had impressed them. Student responses (n=99) were analysed using Leximancer v2.25 concept-mapping software (Leximancer Pty Ltd, Jindalee, QLD, Australia). Results, including differences noted between male and female student descriptions, will be presented and discussed. Findings from this study may assist with the recruitment of veterinary faculty, particularly those involved in clinical practice-based teaching.

References


Integrating simulated consultations and reflective practice into a first year professional practice programme

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Introduction
Reflective practice is a critical professional skill (Schön, 1983). Veterinary graduates need to consistently improve their performance to ensure that evolving standards of care are met (Canfield & Taylor, 2005). Contextualised learning and assessment activities can be used in undergraduate programmes to develop the skills of reflective practice (Boud & Falchikov, 2006). In particular, simulated consultations have been found to be effective in improving the communication and reflection skills of veterinary students (Adams & Ladner, 2004). Disadvantages associated with scheduling simulated consultations for large first year classes include the complex arrangements and extensive resources required (Adams & Ladner, 2004).

A case study is presented of introducing simulated consultations into a first year professional practice programme in the context of limited resources. Assessment formats were designed to emphasise the principles of reflective practice. Students appreciated the opportunity to complete simulated consultations. Suggestions for improvement are made based on assessor feedback.

Context
All first year veterinary science students at The University of Sydney in 2008 (n = 122) participated in simulated consultations. Consultations were videotaped using filming facilities located in the University Veterinary Teaching Hospital Sydney. Students were allocated to each of the roles of a veterinarian, client and peer coach. A soft toy was used to represent the patient. Formative feedback on performance was provided by peer coaches and staff assessors. A 1,500 word essay was used for summative assessment. This was structured according to an established model for veterinary consultations (Radford et al. 2006) and designed to aid reflection on students' performance against personalised pre-nominated goals.

Outcomes
Students generally valued the opportunity to participate in simulated consultations and displayed evidence of reflective practice. Adjustments were required during the programme to address logistical challenges associated with use of the veterinary teaching hospital. Assessment criteria for future years will be expanded to evaluate students' preparedness for the consultations and explicitly incorporate the use of screenshots from the DVD recordings as evidence in the assignment.

References


Use of proprietary materials to teach veterinary communication skills

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**Introduction**  
The ability to communicate effectively with clients and colleagues is an essential veterinary graduate attribute (Collins & Taylor, 2002). Fundamental knowledge and skills required for effective communication can be developed through integrated communication curricula and learning activities (Adams & Kurtz, 2006). A variety of resources have been developed worldwide to assist educators in this aim. One example consists of the modular programme created through the Bayer Animal Health Communication Project (BAHCP) in the USA (Bonvicini & Keller, 2006). The breadth of materials contained in BAHCP modules is explained and a case study presented of how the modules can be applied in an Australian context. Modifications are suggested based on student feedback and the principles of constructive alignment (Biggs & Tang, 2007).

**Background**  
The BAHCP modules originated from educational materials developed for the medical profession by the Institute of Healthcare Communication (Bonvicini & Keller, 2006). Veterinary collaborators have contributed to adapting this material to create twelve modules contextualised to veterinary settings. Each module contains integrated slides, videos, workbooks, exercises and explanatory notes to help students learn the component concepts. Presenters must be accredited and licenced by the Institute for Healthcare Communication to use these materials in their teaching.

**Case study**  
BAHCP modules were used to teach core concepts in veterinary communication during the first three years of an undergraduate veterinary science degree. All of the theoretical content and video presentation/s associated with each module was included in each teaching session. One experiential learning activity was eliminated from each session due to time constraints. Students worked in randomly allocated groups using slide handouts, exercise sheets and workbook extracts as learning resources. Vertical integration of material occurred between years. Student feedback suggested that clearer aims for class exercises and greater cohesion between modules would be helpful.

**Discussion and conclusions**  
Proprietary materials can be used effectively to teach veterinary communication skills. Some modification may be required to suit individual educational contexts. Close alignment and explicit linkage of module aims and exercises to course intended learning outcomes may aid students' learning.

**References**  


Development of online SBLi scenarios for teaching Ruminant Medicine and Production
the Veterinary Science course VETS3012 for delivery in the Collaborative
Teaching and Learning Centres (CTLCs).

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Abstract
Seven online problem based learning (PBL) scenarios using the Scenario Based Learning Interactive (SBLi) tool to enhance the teaching and learning of ruminant medicine and production in VETS3012 have been developed to date. These scenarios are accessible through the SBLi site and have been used within the Collaborative Teaching and Learning Centres (CTLCs) facilitating collaborative learning and discussion of practical SBLi scenarios. An evaluation of the success of the problem based learning approached will be completed at the conclusion of the course to measure any improvements in learning outcomes and/or student satisfaction

Rationale
One of the major difficulties faced in the Veterinary Sciences course VETS3012 has been the complexity of the learning material and terminology as a result of the subject moving from a 5th year subject to a 3rd year subject. This escalating conceptual complexity has resulted in a number of students finding the content of the course difficult to process and apply practically. The course received a poor iCeval in 2007. The majority of students (> 80%) have no experience of rural life or livestock production. There is a paucity of veterinarians willing to work in regional areas (similar to that experienced with medical clinicians). There is a strong need to enthuse the students in this area so that rural practice becomes a more familiar sphere for them to move into.

In order to address this situation, it is necessary to provide students with a flexible, interactive and practical learning experience in which to apply their knowledge. This project clearly supports the strategic and operational Teaching and Learning plans at both the University and faculty level ie. to foster teaching and learning innovation through supporting flexible learning.

Project
The aim is to facilitate active learning of difficult concepts which arise in rural practice and to establish a practical framework through which the students can learn. This was achieved through the use of SBLi and problem based learning. The content and scenarios were presented through case study situations requiring the students to investigate the background to the problem, diagnose the problem using key research knowledge and to implement a reasoned and supported decision. They revolve around actual client calls into a rural practice with the clinician (student) responding to the call and visiting the farm. They must interact with the client and the animals to gain information, then they return to the clinic, send off any required specimen samples, and based on the information gained, send out a report to the client with recommendations.

Scenarios developed were in management of:

- Cattle weaner management;
- Replacement heifer management (including dystocia);
- Bull breeding soundness
- Breeder cow management;
- Pasture based nutrition
- Farm Economics
- Phosphorous deficiency in North Australia;

A plenary session was presented in a Collaborative Teaching and Learning Centre (CTLC) interactive room, then students used the lecture material and other resources on blackboard to answer the problems as they arose on screen (this necessitates an initial lecture in one room and then split into two rooms of the CTLC as the vet classes are large). Students were organised into learning groups which will encourage collaborative discussion of the case study. The features of the CTLC will be fully utilised to generate group debate, discussion and resource sharing.
Students work is assessed via the online marking system in the SBLi site. SBLi only allows work to be completed in one session. There have been several problems with the technology in the CTLC which have been resolved.

**Conclusion**
Student feedback reports have yet to be generated by the students when using the SBLi scenarios for dissemination to the lecturer for his/her assessment of the student’s progress but this will occur at the end of the semester. The students appeared to be happy with the model of learning.
Firehouse Animal Hospital Project: Communication Skills Education and Outcomes Assessment

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Minimal studies in veterinary communication exist, and none pertain to how communication impacts outcomes for veterinarians, clients and their patients. The hypothesis of this study is that communication skills education in a private practice will result in improved clinical outcomes, specifically veterinarian satisfaction and enhancement of communication skills.

The hypothesis was tested using a pre-test/post-test interventional study design. This is a case-based study and purposive sample of 4 veterinarians at Firehouse Animal Health Centers, Capitol Hill location, Denver, Colorado. Forty-eight clients and their pets were sampled on a random basis. Six appointments were videotaped for each veterinarian, including three wellness and three problem appointments.

The Roter Interaction Analysis System (RIAS), a quantitative communication assessment tool, was utilized to describe visit communication. A brief demographic survey was administered to the practice, veterinarians, clients and pets. A 20-item modified physician satisfaction scale was used to measure veterinarian visit satisfaction. The intervention consisted of 12 monthly visits to the practice, including individual coaching sessions, communication modules and two simulated client laboratories.

RIAS data analysis is in process; preliminary demographic and veterinarian satisfaction findings are presented. The clients in the post-test group (2 visits/year) reported twice as many annual visits to the veterinarian than the pre-test group (4 visits/year, p <0.01) and 46% of the clients were female in the pre-test group compared to 75% in the post-test group (p < 0.04). Post-intervention veterinarians perceived that they obtained all the details of the patient’s history, gained client trust, felt confident in treating the patient, had a greater understanding of the client’s story and felt that the clients demanded more personal attention (Table 1).

Findings of this study will inform the development of future outcomes-based studies and communication curricula. Understanding the relationship between veterinarian-client-patient communication and outcomes of care is integral to the success of the veterinary profession.

<table>
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<tr>
<th>Question</th>
<th>Pre</th>
<th>Post</th>
<th>P-value</th>
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<tr>
<td>2 Got all the details on the patient’s history</td>
<td>3.96</td>
<td>4.46</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>9 The client trusts me</td>
<td>3.67</td>
<td>4.29</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>11 I felt confident in treating this patient</td>
<td>4.71</td>
<td>4.88</td>
<td>0.05</td>
</tr>
<tr>
<td>14 This patient is pleasant to work with</td>
<td>4.33</td>
<td>4.75</td>
<td>0.05</td>
</tr>
<tr>
<td>18 I could not understand all this client wanted to tell me</td>
<td>1.38</td>
<td>1.17</td>
<td>0.02</td>
</tr>
<tr>
<td>19 This client demands a lot of personal attention</td>
<td>1.71</td>
<td>1.83</td>
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References

Developing an outcome-based veterinary curriculum

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The veterinary school is developing an innovative outcome-based curriculum. Using this approach, the core content that students learn and the competencies they develop, are relevant to the ultimate role of a veterinarian following graduation. This reduces factual overload, which is a problem in health science curricula, ensuring only content relevant to future veterinary practice is included and assessed in the core curriculum.

This presentation describes the process to date, beginning with a clear vision, developing an outcome-based approach using the “Sheffield” model and ultimately creating an outcome-based core veterinary curriculum structured around clinical problems/presentations, which is available to all students and staff. The “Sheffield” model has been successfully applied in both medicine and dentistry curricula in Australia.

A framework was created which structured the outcome objectives for veterinary graduates under three broad categories: professional and practical veterinary competencies, underpinning veterinary sciences and university graduate attributes. The content of the core curriculum was then defined. A list of veterinary problems/presentations was constructed based on the veterinary literature, published lists and consultation with veterinary professionals. For each problem/presentation a blueprint was created using the outcome objectives as the framework. In each blueprint the underpinning knowledge and specific competencies required to diagnose, understand and manage the clinical problem are identified. A wide range of consultants including clinicians and scientists have been involved in the production of the blueprints ensuring the content is of the highest standard and reflects the requirements of modern veterinary practice. The blueprint content will define the course content of the programme and is available on-line in a searchable core curriculum database for use by both staff and students.

An outcome-based curriculum is an approach based on sound educational principles, meeting the requirements of external regulatory agencies and implementing best practice in curriculum development.
Use of a self-assessment checklist to determine the impact of final year clinical rotations on veterinary science student perceptions of “day one competence”

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The value of clinical practice-based training within the veterinary curriculum from the perspective of graduates has been reported previously (Clarke et al 2002; Fitzpatrick and Mellor 2003). More recently, Baguley (2006) highlighted the value of extramural practice-based learning, from the perspective of final year students. Specifically, placements helped students to link theory and practice, recognise and treat a range of diseases and develop their interpersonal skills. A competency checklist developed by the Royal College of Veterinary Surgeons has been recently adapted for use in Australian Veterinary Schools and has been adopted by the Australasian Veterinary Boards Council (2007). Divided into three broad categories: (1) general professional skills and attributes (12 items), (2) underpinning knowledge and understanding (9 items) and (3) practical competencies (20 items), this document outlines the desirable skills, knowledge and attributes of new graduate veterinarians. As a component of outcomes assessment for the UQ School of Veterinary Science in 2008, we sought to investigate the impact of final year clinical practice-based learning on student perceptions of “day 1 competency”. A self-assessment checklist, developed by adapting the graduate competency checklist developed by the Royal College of Veterinary Surgeons, was administered to students (n=84) on commencement and completion of clinical rotations. Matched pre- and post- responses to items were compared using Wilcoxin signed rank tests. According to adult learning theory (Knowles et al 2005), students are internally motivated and will commit to learning if they perceive that it is relevant for them, or will help them to perform tasks or deal with real-life situations. It was anticipated that the self-assessment checklist would encourage students to identify potential short-comings in their preparation for imminent entry to practice and thereby facilitate self-directed learning. Results, including the impact of age, gender, background and casual nursing experience on student responses, will be presented and discussed.

References


Embedding orientation and leadership activities in disciplinary teaching

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The Faculty of Veterinary Science expanded a half day orientation program for its 220 students in two degrees into a two day orientation and leadership program (Sydney Orientation and Leadership Experience - SOLE) in 2008 and refined the program in 2009. SOLE is briefly discussed and the incorporation of key concepts of SOLE into some first and second year units of study is outlined.

SOLE combines an orientation program for students in the veterinary science and animal veterinary bioscience degrees admitted by the Faculty with a leadership program inspired by and based on an American veterinary specific leadership program (Burns et al. 2006). The orientation component introduces students to key staff, University support systems and the two campuses. The leadership component focuses on experiential learning and reflection about generic graduate attributes with a focus on emotional intelligence, teamwork and communication. This leadership program for students is a logical extension of a shared leadership program for Faculty staff (Taylor & Canfield 2007).

Barrie (2004) highlighted the importance of embedding graduate attributes in the disciplinary curriculum. Both orientation and leadership aspects are included in the first author’s teaching and assessment in two first year Cell Biology units of study and a second year Genetics and Biometry unit. Learning activities in first year are focused on the orientation to teamwork and the University’s online virtual learning environment system. In second year, a learning activity links a model of emotional intelligence with ethical decision making and a group assessment task creates awareness for potential leadership roles of veterinarians in animal breeding.

A detailed analysis of the impact on students’ graduate attribute development has still to be conducted. However, initial feedback from students and staff is positive. In 2009, 98% of students stated that they would recommend SOLE to next year’s incoming students. The embedded orientation activity related to the online learning system ensures that all students are familiar with its different components within the first three weeks of their studies. Based on feedback from colleagues, students are also better prepared for group activities and student feedback in relation to the ethics in genetics activity is encouraging.

References:
Burns GA et al. (2006) JVME 33(2) 301-308.
The professional practice program has been an integral part of the veterinary science undergraduate curriculum at The University of Sydney since its introduction in 2000 (Collins 2002). Focusing on the development of professional and life skills to prepare students for the transition to practice, the program has previously only been delivered prior to final year clinical rotations (Baguley 2006). The lack of opportunity to reflect on real-life clinical or ethical situations experienced during this final year of work integrated learning was recognised as a deficit of this new program (Orrell 2004).

A small group tutorial was developed and delivered to students undertaking their final year general practice rotation at The University of Sydney Veterinary Teaching Hospital – Sydney. The tutorials provided students with opportunities to develop their emotional intelligence as described by Goleman (1995), through the processes of reflection and discussion with colleagues. Students were also guided through a consequentialist (Singer 1993) ethical model to assist their management of these and similar situations in the future.

Improved self awareness was initially stimulated through the completion of a consultation communication self evaluation questionnaire. A discussion of one or more difficult scenarios was then conducted in a relaxed, informal group setting. Students were encouraged to draw upon situations that they had encountered in clinical practice, and these were supplemented by scenarios provided by the tutor. Improved social awareness was supported through sharing of opinions and through the introduction of the ethical model which encouraged students to consider owner, veterinarian and patient perspectives. The model led students to identify the underlying factors contributing to clinical conflict, and students worked through the scenarios using this model as a framework.

Feedback was collected from students after each of these tutorials and provided a basis for on-going improvement in their implementation. Students appreciated the opportunities to discuss these cases, hear the experiences of their peers and found these tutorials relevant and helpful.

References
As a professional development task within the Veterinary Professional Life (VPL) suite of units, second-year veterinary students were required to compile and reflect upon “a list of the personal attributes or qualities you consider important for personal success in a veterinary career, according to your personal definition of success”. The intention was for this exercise to build upon professional and career development exercises conducted in 1st-2nd year, including (i) one week of extramural experience, focused on ‘observing a veterinary workplace in action’; (ii) interviews of veterinarians, allied staff (e.g. nurses), and animal owners, regarding their views of a successful veterinary workplace; (iii) group discussions from a VPL camp, involving experiential activities themed particularly around emotional intelligence, communication, and leadership; (iv) any relevant literature, explored as part of their professional development portfolio; and (v) their own personal feelings and values on the topic. The frequency of factors identified (Table 1) demonstrates that veterinary students intuitively grasp not only the importance of key veterinary professional attributes (communication, empathy, etc.) but also healthy work habits and attitudes (balance, stress management). Technical or knowledge-based competencies (30% of students), business skills (15%), or leadership (15%) were listed by far fewer students. Where their ‘personal definition of success was stated, this was most frequently related to happiness, balance, or goal attainment. Interestingly, animal-driven factors (welfare, human-animal bond, etc.) were rarely explicitly stated in either students’ factors or definitions of success. This assessment task appears to have been a valuable exercise in developing career awareness, and in developing motivation for personal and professional development early in the veterinary course.
Table 1: Frequency of factors identified by 2nd year veterinary students when asked to “list the personal attributes or qualities you consider important for personal success in a veterinary career”.

<table>
<thead>
<tr>
<th>Attribute cluster</th>
<th>Percentage*</th>
<th>Weighted fraction**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication skills</td>
<td>85</td>
<td>0.086</td>
</tr>
<tr>
<td>Work-life balance</td>
<td>81</td>
<td>0.077</td>
</tr>
<tr>
<td>Continuing education</td>
<td>66</td>
<td>0.062</td>
</tr>
<tr>
<td>Stress management; resilience</td>
<td>64</td>
<td>0.059</td>
</tr>
<tr>
<td>Compassion; empathy</td>
<td>55</td>
<td>0.056</td>
</tr>
<tr>
<td>Teamwork</td>
<td>51</td>
<td>0.047</td>
</tr>
<tr>
<td>Adaptability; flexibility</td>
<td>51</td>
<td>0.046</td>
</tr>
<tr>
<td>Realistic goals; know limits</td>
<td>49</td>
<td>0.046</td>
</tr>
<tr>
<td>Positivity; optimism</td>
<td>45</td>
<td>0.041</td>
</tr>
<tr>
<td>Equity; respect</td>
<td>43</td>
<td>0.038</td>
</tr>
<tr>
<td>Prioritization; organisation skills</td>
<td>40</td>
<td>0.039</td>
</tr>
<tr>
<td>Integrity; ethics</td>
<td>40</td>
<td>0.038</td>
</tr>
<tr>
<td>Passion; enthusiasm</td>
<td>38</td>
<td>0.035</td>
</tr>
<tr>
<td>Self-confidence</td>
<td>38</td>
<td>0.032</td>
</tr>
<tr>
<td>Drive; goal-setting</td>
<td>32</td>
<td>0.028</td>
</tr>
<tr>
<td>Support networks</td>
<td>32</td>
<td>0.026</td>
</tr>
<tr>
<td>Knowledge; competence; skills</td>
<td>30</td>
<td>0.028</td>
</tr>
<tr>
<td>Perseverance; work ethic</td>
<td>28</td>
<td>0.025</td>
</tr>
<tr>
<td>Listening skills</td>
<td>26</td>
<td>0.026</td>
</tr>
<tr>
<td>Accountability; responsibility</td>
<td>26</td>
<td>0.026</td>
</tr>
<tr>
<td>Accept/learn from mistakes</td>
<td>26</td>
<td>0.022</td>
</tr>
<tr>
<td>Authenticity; honesty</td>
<td>25</td>
<td>0.021</td>
</tr>
<tr>
<td>Business/financial skills</td>
<td>15</td>
<td>0.014</td>
</tr>
<tr>
<td>Emotional intelligence; self-awareness</td>
<td>15</td>
<td>0.013</td>
</tr>
<tr>
<td>Self-respect; self-esteem</td>
<td>15</td>
<td>0.011</td>
</tr>
<tr>
<td>Leadership</td>
<td>15</td>
<td>0.010</td>
</tr>
<tr>
<td>Concern for animal welfare</td>
<td>11</td>
<td>0.010</td>
</tr>
<tr>
<td>Friendly; approachable</td>
<td>9</td>
<td>0.009</td>
</tr>
<tr>
<td>Problem-solving; lateral thinking</td>
<td>9</td>
<td>0.006</td>
</tr>
<tr>
<td>Patience</td>
<td>8</td>
<td>0.007</td>
</tr>
<tr>
<td>‘Big picture’ thinking</td>
<td>8</td>
<td>0.006</td>
</tr>
<tr>
<td>Sense of priorities; perspective</td>
<td>8</td>
<td>0.005</td>
</tr>
<tr>
<td>Networking</td>
<td>4</td>
<td>0.005</td>
</tr>
</tbody>
</table>

* n=53; **Average fraction of total number listed
Determining the effectiveness of an interactive communication skills and human-animal bond workshop in final year veterinary students

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Recently, researchers have identified that the teaching of non-technical competencies needs to be improved in veterinary schools, in order to meet the demands of a consumer driven society. Further, non-technical competencies, such as communication skills and the understanding of the human-animal bond, appear to be in most need of being taught more effectively. Although there is good evidence that faculty of veterinary schools are addressing this issue by incorporating communication skills workshops within their curriculum, the effectiveness of these programs is not as well documented. Further, research in veterinary communication is often atheoretical or lacking in a theoretical foundation to explain why such programs may be effective.

The present study had two main aims, firstly to describe an effective communication skills and human-animal bond workshop and secondly to investigate the suitability of a theory of communication that has been used in the healthcare industry (Communication Accommodation Theory) to describe patient satisfaction. In this study 14 veterinary students attended a communication skills workshop that was designed to teach them about effective communication skills, the human-animal bond, and communication accommodation theory. To demonstrate the effectiveness of the workshop pre and post measures were used. These comprised of self-report surveys and videotaped analysis of simulated consultations with actors.

The results suggest that the workshop significantly improved the students’ perceptions of their competence with regards to communication skills and the ability to understand the human-animal bond. Simulated clients also perceived significant improvement of students’ competence in these skills. Further, simulated clients reported significantly greater satisfaction with the communication encounters with students when comparing pre with post. These results support the usefulness of Communication Accommodation theory as a tool to teach, measure and structure a communication skills workshop. The authors believe that the development of communication skills programs should use a theoretical foundation to support their effectiveness. With the continued support of veterinary educators and faculties veterinary non-technical competencies can be improved.
Teaching on the Run

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Most clinicians working in a university veterinary hospital teach or supervise, but very few have been taught how to teach. The Education Centre (EdCent) at the Faculty of Medicine and Dentistry at the University of Western Australia (UWA) has developed the Teaching on the Run training programme to help improve the quality of teaching and supervision of trainee doctors. The programme consists of six modules: Clinical Teaching, Skills, Feedback and Assessment, Supporting Trainees, Effective Group Teaching, and Planning Term Learning.

The programme is being adapted for use in the Veterinary Teaching Hospital setting, and the first three modules are being presented to the clinical staff of the hospital. The first group underwent the programme in November 2008, the second in April 2009. It is planned that all of the departments within the Veterinary Clinical Sciences Division at Murdoch University will complete the programme. Research investigating the effectiveness of the programme (with respect to improving the quality of teaching) is underway. Both the participants and the recipients (ie the students), are being surveyed and their responses will be collated.

Anecdotal responses from participants suggest that the programme is proving to be very useful, practical, and informative. Staff are attending the course grouped in their departments, and they are welcoming the opportunity to “brainstorm” teaching methods, and to discuss difficulties that they may encounter whilst teaching in the clinical setting. In addition, the positive comments are resulting in other groups of clinicians being keen to do the course themselves.

The ultimate aim is to expand the Teaching on the Run programme to the other Veterinary Schools within Australia. The programme also has a Train the Trainer module, in which facilitators can be trained to deliver the programme. In other words, the programme is designed to be transportable, so that a clinician can be trained to deliver the programme to his/her own faculty. In this way, costs to individual schools can be minimised.
While it has been observed that the media can mould and reflect popular attitudes and views (Kilborn et al., 2001), “both changes and regularities in media content reliably report some feature of the social reality of the moment” (McQuail, 1987, p.178). By examining popular media representations of veterinarians, in media such as the fiction film, it is possible to observe the perceived societal value of the veterinarian practitioner. This then enables an understanding of how to address the current views that society holds about the veterinarian, and the ways in which there can be a better appreciation for the veterinarian as a true health professional. The images, clichés, and metaphors employed by filmmakers are paralleled in popular culture, and in this respect, filmmakers mirror the sentiment of their audiences (Turner 1999, pp. 100, 144). Kilborn et al. (2001) suggest that “media representations have always been important in shaping the images of professions… and that this helps to shape public perception of their role” (p.385). “The assumption [is] that the relative frequency with which certain fields or disciplines appear in movies reflects most likely the degree of public concern associated with the knowledge produced by them” (Weingart, 2006, p.36).
Personal attributes of veterinary support staff: What do our veterinary clients value?

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Unlike the human medical field, veterinary clinical practice is based on a triad comprising the veterinarian, the client and the patient (animal). The client is the decision-maker regarding loyalty to the veterinary practice which would not be based solely on the clinical expertise offered. Studies have demonstrated that the emotional aspects of the veterinarian-client relationship are very important to the client (Tinga, Adams, Bonnett, & Ribble, 2001). To date there has been limited research about clients’ perceptions of their relationships with veterinary support staff, integral members of the veterinary healthcare team. The aim of this study was to describe the perceptions of veterinary clients in regard to the personal or emotional intelligence attributes of veterinary technology graduates from The University of Queensland (2003-2006). The study examined attributes that clients valued during interactions with these graduates in the clinical environment. A sample of 441 clients, from four South-East Queensland veterinary practices which employed veterinary technology graduates as veterinary support staff, was surveyed via questionnaire. Attributes which emerged as being very important to clients were demonstrated in veterinary technologists who thought before they acted, were empathetic, handled pressure effectively, were able to make others feel better and, had excellent social skills. Qualitative responses to an open-ended question requesting additional attributes enriched the results revealing an emphasis on the humanistic attributes of caring, compassion and empathy. These findings would suggest that clients’ perceptions about the quality of the experience at the veterinary practice would be influenced by the quality of their interactions with veterinary support staff. Hence, study results would offer insights relevant to veterinary technology undergraduate education, particularly in the context of professional practice. Further research investigating strategies for developing veterinary technologists’ personal attributes through undergraduate education would be pivotal in preparing graduates for the ‘real world’ equipped to meet societal needs.

References
Vertical integration of content in a professional practice curriculum

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Non-technical skills are essential for success in a professional career (Goleman, 1995). Veterinary schools and colleges worldwide seek to foster these attributes through professional practice curricula (Collins, 2002; Lloyd et al., 2004). Vertical integration of content between curriculum components presented in sequential years can aid students’ learning (Biggs & Tang, 2007). A case study of vertical integration in a professional practice curriculum is presented. Suggestions for improvement are made based on student feedback, student learning principles (Ramsden, 2003) and literature in veterinary education (Heath, 1996; Paul & Podberscek, 2000).

The Professional Practice programme offered by the Faculty of Veterinary Science at The University of Sydney commenced in 2000 (Collins, 2002). It seeks to introduce students to the key themes of professionalism, personal development, practice management, communication and humanities. Topics emphasised include leadership, ethics, animal welfare, veterinary legislation, team work and business management. Theory is complemented by practical experience gained through visits to veterinary practices. The purpose of the programme is to prepare students and graduates for a successful transition to their final year of work integrated learning and ongoing veterinary career.

Vertical integration of content is achieved throughout the professional practice curriculum by revisiting key themes from new perspectives as students progress through their degree. Team teaching is used to introduce students to a variety of perspectives in each area. This involves a range of presenters from private practice, government and industry as well as academic staff members associated with the professional practice unit.

Student feedback indicates that students generally perceive the relevance of what is being taught to their future career. Team teaching is appreciated and practical experience is particularly valued. Suggestions for improvement highlight challenges related to balancing immediacy of use with allocated curriculum time. Adjustment of the curriculum is suggested to further engage with students’ evolving priorities throughout the degree.

References
Charles Sturt University (CSU) has developed a non-metropolitan based veterinary science course, with student selection based on a written questionnaire and interview. A curriculum was developed which allowed students to work with different live animal species throughout the six year programme, in order to retain student interest and focus on their future career. To facilitate the development of self-directed learning skills, problem solving, critical thinking and communication skills, a two-year Problem-Based Learning (PBL) curriculum was developed running from mid-year 3 to mid-year 5. Studies suggest that PBL programs have a positive effect on performance in several areas, including communication skills and clinical reasoning, in the first two years after graduation (Thammasitboon, Sukotjo, Howell & Karimbux 2007).

PBL was introduced in the 1980’s, due to the perceived failure of conventional programs to prepare graduates effectively for real practice and the need for graduates to be ongoing self directed learners. In the didactic curriculum, content overload and poor student learning experiences were evident through poor lecture attendance, poor retention of discipline knowledge over time and general student dissatisfaction (Savery & Duffy 1995). A PBL curriculum is designed to address these issues and to encourage students to learn ‘how to learn’. PBL students often comment that their emotional well being and the quality of the learning environment are improved by a PBL curriculum.

The decision to implement a PBL curriculum at CSU was not taken lightly. Potential pitfalls were identified, careful and extensive research and visits to other PBL programmes undertaken, before the decision was taken. The result is a sustainable model of PBL delivery, including the development of a unique and detailed PBL package template and facilitation of multiple teams by one or two facilitators; which allow the teams to be largely self-directed and self-driven, working independently of a facilitator.

References:
Thammasitboon, K, Sukotjo, Howell, H & Karimbux, N 2007, Problem-Based Learning at the Harvard School of Dental Medicine: Journal of Dental Education; Vol 71, 8, 1080 – 1089
Introducing Client Simulations into the Veterinary Curriculum

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The introduction of simulated clients for all students in 5th year Rotations and in a 3rd year workshop has been facilitated over the last two years by an ALTC grant. Students’ overall confidence in client communication significantly increased immediately after the simulations in the Rotation in which students selected two medical problems to discuss with the client, and ‘to negotiate a mutually acceptable management plan’. Responses showed that the simulations allowed individual students to become conscious of other areas of incompetence in their communication skills. Annual student surveys held before and after this change in the curriculum have also demonstrated significant differences in student’s responses to questions regarding their confidence in specific communication skills; these are skills which are considered likely to enhance their success in veterinary practice. The introduction of a student-driven organisation (VBMA) in the same year may also have contributed to the increase in confidence expressed in the annual survey.

The coaching process involved in the client simulations has been refined to enhance student outcomes with the introduction of conversations with a practicing veterinarian in the preparatory phase. The majority of students selected the task of ‘breaking bad news’ for their simulations; and male students expressed significantly lower levels of confidence in expressing empathy. The challenges, strengths and weaknesses of the simulation process in Rotation will be discussed in terms of the setup, student responses and outcomes. Recommendations for further developments in the curriculum to enhance these skills will be discussed.

<table>
<thead>
<tr>
<th>Question</th>
<th>2007 Mean</th>
<th>2008 Mean</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>During the course of my veterinary studies I have taken extracurricular activities to help prepare myself for when I graduate.</td>
<td>3.49</td>
<td>4.13</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>I have attained skills in the veterinary course that give me confidence talking to clients regarding paying for their pets treatment.</td>
<td>2.64</td>
<td>3.33</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>I have obtained skills at Murdoch University that has given me confidence in dealing with client complaints.</td>
<td>2.64</td>
<td>3.37</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>I have confidence in managing staff effectively so they perform at their best.</td>
<td>2.86</td>
<td>3.37</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>I have attained skills in the veterinary course that allow me to manage myself effectively in stressful situations.</td>
<td>3.25</td>
<td>3.65</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>I have attained skills in the veterinary course that give me confidence talking to client about the loss of their pet.</td>
<td>3.03</td>
<td>3.56</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>I would like to have more practice talking to clients before I graduate.</td>
<td>3.72</td>
<td>3.23</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>
CSU delivers its veterinary Science course in three phases –

Phase One: Year 1 – 3.5: Primarily didactic learning
Phase Two: Years 3.5 – 5.5: Problem based learning
Phase Three: Years 5.5 – finish: Clinical rotations.

Between the last two phases we have scheduled a four week long course that we have termed “Transition to Practice.” (TTP.)

This paper discusses the syllabus of this subject and the rationale behind our content choice. The intent of the TTP session is:

- To prepare students for Phase three.
- To engineer the start of a paradigm shift in thought and attitudes from undergraduate to veterinarian in practice.
- To present a range of subjects and topics that we consider essential day one skills that have not / will not be otherwise addressed.

A major challenge was in constructing an appropriate curriculum. To our knowledge no other school has such an intensive four week period assigned exclusively to this purpose. The final course curriculum was drafted after considering:

- First day skills as identified by a number of veterinary schools in Australia and UK.
- Criteria identified by employers in selecting new graduates.
- Subjects identified by recent graduates as knowledge or skills they have recognized as being either missing or not adequately dealt with in current curriculums.
- Subjects identified in open forums, panels and one on one discussions intra school.

The final content and structure will be presented at the symposium.

We believe this subject will considerably enhance our students’ preparation for practice by improving their range of skills and Knowledge and confidence in them and will increase the likelihood of them successfully entering and being retained in practice.
Approaches to help veterinary students develop better mental constructs of epidemiological concepts

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Veterinary science programs aim to provide a focused learning environment that supports students as they develop knowledge and skills in a range of diverse but interrelated areas. Veterinary skills include physical and cognitive processes, and it is likely that students achieving deep learning apply a wide range of mental approaches to develop expertise in these processes. These approaches are likely to vary both between students and with the knowledge and skills being taught. Although epidemiological skills are almost always applied in pragmatic settings involving improved treatment, prevention and control of disease, many of these skills are based on abstract concepts. There has been little investigation of either mental approaches that enhance deep learning of these concepts and skills, or of educational approaches that facilitate such learning.

Epidemiology teaching is embedded in all five years of the University of Queensland veterinary science program. Over the past five years, a number of novel approaches have been used to develop epidemiological skills within this program. One such approach aims to help students build their understanding of basic infectious disease concepts such as latent and infectious period, and of more complex concepts including how non-immune individuals can be protected by herd immunity, and methods for controlling infectious diseases. This classroom exercise involves simulation of an epidemic in which the students themselves constitute the population in which the epidemic occurs. Students enjoy this exercise and feedback suggests that this approach facilitates development of useful mental constructs around these concepts. More detailed evaluation of this and of approaches being used to develop other epidemiological skills is required. Such evaluation should include attempts to describe ways that students learn and conceptualise complex epidemiological concepts. This understanding is central to developing more effective approaches to supporting students as they develop epidemiological skills.
Engaging undergraduate veterinary students in public health pertaining to parasitic zoonoses

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Incorporation of a diversity of teaching styles is particularly important to the subject area of Veterinary Public Health (VPH), especially those pertaining to parasites of zoonotic significance. Many of these diseases are encountered in developing countries and communities and students, particularly those living in Australia, often cannot relate to the subject matter and see it as a ‘world away’. Students often remain disinterested in those parasitic zoonoses present in Australia as they fail to see the relevance of the subject in their future careers as clinicians in private practice.

The aim of the study was to evaluate student responses to the current teaching styles utilised to engage and motivate student learning in veterinary public health, in particular, parasitic zoonoses by use of a ranked questionnaire.

After completing the VPH course, 93% of students that had previously found the subject of parasitic zoonoses disinteresting (50% of respondents), agreed that they had subsequently gained an interest in the subject matter. In fact, 100% of students agreed that the knowledge and skills gained would be relevant to their career as veterinarians. One hundred percent of respondents strongly agreed (73%) or agreed (27%) that storytelling, videos and photographs shown during lectures of specific research work undertaken by the lecturer in developing countries helped demonstrate the material in a ‘real-life context’ and aided understanding and learning of the subject matter. Moreover, 92% of students agreed that problem-based case enactments on parasite zoonoses helped them appreciate the relevance of the subject matter in a clinical setting. After completion of the course, 87% of students were motivated to independently gather more information on the subject matter and 100% felt that they had delivered to them the most up-to-date findings. Most students (91%) agreed to have a good knowledge base of parasitic zoonoses after completion of the course and 77% were confident in their abilities to provide advice to clients with regards to the treatment, prevention and control of these diseases in their animals.
Development of the “Virtual Veterinary Surgery” for teaching the principles of surgical practice.

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The “Virtual Veterinary Surgery” program has been developed as an interactive, image rich resource for teaching undergraduate students in the principles and practices of surgery.

The program is intended to enhance the learning experience of the students and integrate the delivery of the undergraduate course in surgery, which includes didactic lectures and practical classes. The aim of the program is to support the development of the essential clinical skills and knowledge of basic surgical concepts, including the importance of proper preparation of equipment, the surgical facility, the surgeon and patient, as well as the essential surgical techniques required for the successful outcome of a surgical procedure.

The program consists, at the entry level, of a panoramic image of a surgical procedure being performed, including the surgeon, patient, surgical equipment, surgical theatre and anaesthetic equipment. Moving the mouse across the image, or navigating by the menu bar, provides access to various parts of the program and resources provided in the form of notes, images, video segments, relevant websites, case studies and self-tests.

The program is used extensively in preparing the students for practical exercises to enhance the learning experience and development of technical skills within a surgical setting.

The program also provides the students with continuing assessment in the form of self tests, competency assessments during the practical exercises, reflective exercises and feedback throughout the course.

Clinical competencies assessed in this way include the practice of aseptic technique, instrument use, tissue handling, wound management, and suturing skills which culminates in the completion of a “Clinical Skills Acquisition Checklist”, an essential hurdle requirement for entering the clinical rotations in subsequent semesters.
Problem Based Learning (PBL) has been utilised in many health and medical courses nationally and internationally, including veterinary science. At Charles Sturt University (CSU) a PBL program was designed to assist in the development in our students of graduate attributes, including communication and team skills, problem solving, critical thinking, self and peer evaluation and self-directed learning. PBL is a learning philosophy whereby students investigate a problem, undertake self-directed learning whilst researching the problem, and then apply this new information to the problem in an attempt to progress or resolve the situation. This necessitates that students direct what they will learn; academic staff direct the students by providing relevant ‘triggers’ written into the disclosures given to students.

A mixed method approach was used to investigate students’ perspectives and experiences during the transition from a traditional didactic curriculum to a PBL curriculum. As this involves a shift from teacher centred learning to student centred learning, we wanted to determine which factors were perceived as challenges by students prior to beginning the PBL program, and to understand the extent of their PBL knowledge prior to commencing PBL.

Areas of student concern largely revolved around

- Accessing adequate resources (library, internet access and online material);
- The necessity to undertake self-directed learning consistently, rather than spending a few days preparing assessment items and examinations, resulting in less time to socialise and play sport.

Students foresaw a number of benefits to the PBL curriculum including

- Increased motivation to study due to working as part of a team; and
- Relevant, authentic cases promoting motivation and preparation for their career.

The results of this study have been used to identify areas of student preparation that can be modified to facilitate student transition to a PBL curriculum in a smooth, innovative and effective way.
What's the problem with PBL?

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Problem Based Learning (PBL) was developed as a response to concerns about the capacity of traditional, didactic teaching methods to prepare graduates for clinical practice and life long learning. In an era of exponentially increasing information overload and concerns for the psychological well-being of young graduates, PBL’s premise to provide students with opportunities to ‘learn how to learn’ in a social constructivist educational setting is enticing. An inherent emphasis on problem solving and group interdependence offer the student opportunities for metacognitive and social development, and provide respite from the burden of content overload and teacher dependence implicit in many didactic approaches.

Concerns about limitations of the PBL approach have paralleled the implementation of this paradigm. Such concerns revolve most commonly around a number of themes:

- Does PBL represent an unsustainable institutional cost and increased staff workload?
- Is an unacceptably high increased student workload inherent in PBL?
- What are the consequences of the perceived loss of a structured learning environment?
- Will coverage of procedural and domain knowledge be adequate?
- How can we predict or document what students have actually learned?
- Will the approach achieve its educational objectives?

Such concerns are completely appropriate and the rigorous evaluation and refinement of any teaching / learning environment is requisite for high quality education.

A PBL curriculum has been developed and implemented for a two year period at Charles Sturt University to facilitate student learning in clinical and para-clinical disciplines. Referred to as "Phase 2" of our course, PBL is supported by group PBL Tutorial Sessions, limited information sessions (lectures) and extensive practicals, tutorials and workshops. Difficulties anticipated prior to, and encountered during, the first iteration of the PBL curriculum, strategies to circumvent these problems and observed strengths of the educational setting in our experience will be reviewed.
Problem Based Learning (PBL) has been utilised in many health and medical courses including veterinary science. At Charles Sturt University (CSU) a two year PBL curriculum is undertaken in the middle years of a 6 year course. The authentic PBL packages provide the framework for student learning and are designed to be facilitated by a “non-expert” facilitator – one with facilitation skills, but not necessarily a vast knowledge of the case to be studied.

Students receive case information via a “disclosure” or “part”. Students are asked to work through a set of Situation Analysis and Clinical Reasoning (SA & CR) questions. By doing this, students systematically

- Note what they know (about the situation, client, animal or context),
- Identify problems relating to the situation, client, animal or context,
- Develop hypotheses relating to the animal(s) problems,
- Prepare a plan (diagnostic plan, treatment, monitoring and management), and
- Consider the consequences for both client and animal(s).

Throughout this process students identify Learning Issues to be researched during self-directed study time, which they will then apply to the package. By working through each PBL disclosure, students identify areas requiring deeper knowledge; the package being a framework on which to build their individual learning.

The PBL process provides students with the opportunity to make an error of judgement (e.g. clinical, moral, ethical or economical), without serious consequences, consider dealings with difficult clients in typical and atypical situations and contrast their own approach to the case with that included in the package. The extensive Facilitator Guide written for each package provides the facilitator with expected student responses to the SA & CR questions, and with key information pertinent to the case(s). Questions for plenary sessions are also provided (with expected answers), which highlight important aspects of the problem, including areas that students should consider and discuss, such as welfare issues.
The Veterinary Science course at Charles Sturt University was approved as the fifth Australian veterinary school late in 2003 and launched in February 2004. A vision statement for Veterinary Science was subsequently developed:

Charles Sturt University will provide competent veterinary graduates with a strong commitment to animal health, welfare and research and to the development and protection of animal industries.

To this end, selection process has been developed which aims to select students based on:

1. High level academic capability;
2. A demonstrated interest in and commitment to rural Australia, veterinary science and animal production;
3. An understanding of the unique ethical and practical issues that confront veterinarians concerned with rural practices and animal production;
4. The capacity to communicate effectively, both orally and in writing.

Selection is based on academic merit, submission of a written application which explores, *inter alia*, student motivation in pursuing a career in veterinary science, their ability to communicate in writing on a current and controversial topic, and past experience relevant to the School’s aims. Student applications are graded independently by at least two academics and the top 160 students are selected for interview. A structured interview process has been developed which explores students’ oral communication skills and further probes their understanding of, and commitment to, rural veterinary pursuits.

This process is more labour intensive than traditional methods which rely on academic merit alone. The contribution of the selection process to the achievement of CSU’s vocational and educational goals must therefore be rigorously evaluated. Whilst the ultimate measure of the School’s programme will be the calibre of its graduates – and this will not be evident for some time yet – there is a need to set proximate goals and benchmarks to document interim successes and by which to ensure continual and responsive refinement.
Veterinary Physiology at Charles Sturt University is taught as part of the second year curriculum. Building on previous teaching experiences and observations from students, other teaching staff, graduates and employers, veterinary physiology teaching staff identified a cluster of problems of mutual concern and consequence. These related to:

- Student difficulty perceiving the relevance of preclinical subjects such as physiology;
- Observations that second year veterinary students are typically highly teacher-dependent with a strong preference for individual (cf. collaborative) learning and limited awareness of learning preferences and processes.

To address these concerns, a case-based activity has been developed which aims to provide students with an opportunity to:

- Use their knowledge of basic physiological principles to interpret clinical case material;
- Develop and demonstrate skills in self-directed and collaborative learning;
- Recognise learning strengths and weaknesses through reflection, self and peer assessment;
- Give and receive constructive feedback.

An action research approach has been used to evaluate the efficacy of this approach in addressing our concerns. Action research represents a form of collective, reflective enquiry whereby educational praxis is systematically evaluated, critically informed action is implemented and this, in turn, is monitored and further evaluated. It is a cyclical or spiral activity which typically commences with the identification of a ‘thematic concern’ or ‘needs assessment’, and progresses as an iterative process of planning, action, observation and reflection.

The result of this intervention in achieving the aims has been assessed by paired questionnaires administered prior to and following the task, students’ spontaneous responses in a guided reflection activity, formal and informal student feedback. This data, and staff reflections on the implication of these observations, are presented as the impetus for the next cycle of our action research spiral.
The veterinary curriculum at CSU distinguishes itself by a number of innovative strategies, including clinical examples, clinical placements, case based and problem based learning, to ensure student development of graduate attributes and clinical competencies. Reflection suggested that this approach risks blinding students to graduate opportunities outside clinical practice and may limit opportunities for students to learn and use scientific research methodology.

To address these concerns, two novel learning activities involving carefully managed ‘experiments’ have been incorporated into veterinary physiology. The first exercise, conducted in Semester 1, involves a prescribed experimental protocol to assess the endocrine response of sheep to metabolic stimuli. Under supervision, students are responsible for data collection and interpretation, and are required to submit a modified research abstract detailing their findings. The second exercise, completed in Semester 2, requires students to investigate physiological responses to exercise in horses. Under careful supervision, students are responsible for experimental design, data collection and interpretation, and the submission of results as a research poster. Prior to undertaking their experiment, each group must convince teaching staff of the scientific rigor and validity of their proposal, and justify their outcomes in terms of animal welfare cost. Both projects have been approved by the Animal Care and Ethics Committee at Charles Sturt University.

Evaluation and reflection on this intervention are based on student engagement in each task, formal and informal student feedback and assessment of modified research abstracts and research posters submitted by each group at the completion of their experiments.
Staff preparation for Problem Based Learning

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Since its inception at McMaster University Medical School in Canada in the late 1960s, Problem Based Learning (PBL) curricula have been adopted by numerous faculties of medicine, dentistry, nursing and other health sciences, as well as agriculture, veterinary science, education, social work, engineering, architecture, business, law, economics, management, mathematics, education, introductory university science and other disciplines. The educational advantages claimed of PBL methods have been well documented and include increased student understanding and knowledge retention, essentially because learning is contextualised and applied. PBL is a highly structured learning activity which requires a large amount of planning and development, as well as facilitator training. PBL demands big changes in the way teachers fulfil their teaching roles.

A PBL curriculum has been developed and implemented for a two year period at Charles Sturt University to facilitate student learning in clinical and para-clinical disciplines. Staff training strategies implemented to in support of PBL include:

- Facilitator training
- PBL package writing retreats
- A 'buddy' facilitator system for new staff
- Extensive 'mapping' of PBL curriculum content and documentation of curricular alignment
- Informal student evaluation of packages, facilitation and process
- Weekly corporate planning meetings

Building on our unique opportunity to examine the efficacy of staff training and preparation for PBL implementation, we have undertaken a scholarly evaluation of staff preparation for PBL. This work has commenced with the collection of 'baseline' data on staff perceptions of learning, expectations and concerns associated with PBL. Data has been collected prior to the implementation of PBL (or at the commencement of employment for staff recruited since the implementation of PBL) by questionnaire, interview and focus groups. Staff perceptions of preparedness will be further examined after completion of the first iteration of Phase 2 teaching.
Acquisition of personal attributes relating to professionalism: Australian veterinarians’ perceptions

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Personal attributes characteristic of professionalism are integral to the role of the professional in practice-based disciplines. As such, professionalism has been widely discussed in the educational literature of the medical and allied health fields, and more recently in the veterinary field, by advocating an holistic approach to professional education. This implies a focus on the development of personal attributes as well as cognitive skills and the discipline-specific technical skills (Hilton, 2004; Wear & Castellini, 2000). The aim of this study was to describe veterinarians’ perceptions of a range of personal attributes related to their professionalism and whether these were acquired prior to, during or after their veterinary education. A sample of 100 veterinarians attending the Australian Veterinary Association National Conference (2006) was recruited to answer a reflective survey of these issues. Quantitative data were collected and used to compare when these attributes were reported to have been developed or acquired. Findings indicated that the majority (>65%) of the participating veterinarians believed they had acquired the personal attributes of empathy, compassion, and a respect for self and others prior to their veterinary education, with few (<5%) indicating that these attributes were acquired during their veterinary education. On the other hand, the ability to reflect was viewed by the majority of the responding veterinarians to have been acquired, after their veterinary education. Improving our understanding of veterinarians’ perceptions of when they acquire these personal professional attributes may be used to inform veterinary curriculum development, particularly in the professional studies and clinical contexts. Future research investigating those personal attributes which are acquired only to a limited extent during veterinary education could be vital to the professionalisation of veterinary graduates.

References
Students are motivated to learn when they see the relevance of what they are learning, and the skills they are developing, for their future careers. Veterinary clinical pathology has traditionally been taught in a didactic way involving rote learning of a large amount of dry facts in relative isolation from cases and the diagnostic process. However, to increase relevance and enjoyment of learning, veterinary students are helped to construct a diagnostic framework, or how to workup a case, as a scaffold on which to hang the large volume of information they are taught in the veterinary science programme. Thus, historical, clinical, laboratory, imaging, pathology and therapeutic information is integrated into these case studies. This contextualizes the information provided in lectures, placing it firmly in a real-life context and making the information easily applicable to other cases. This allows students to develop the diagnostic skills that are essential to be an effective and confident clinician at graduation. This approach is demonstrated in lectures and tutorials, and students then practise this approach on cases in a mixture of self-directed learning and small study groups. This stimulates curiosity, independence in learning, and encourages development of communication and interpersonal skills. Students then present cases to their peers. This encourages active student involvement and development of critical thinking, problem-solving and analysis skills, not merely passive attendance. A supportive learning environment is essential for students to learn these skills effectively. Veterinary students find this approach very useful to develop skills they will need at graduation.
The Veterinary Leadership Experience (VLE)

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The Veterinary Leadership Experience (VLE) is a highly interactive program that aims to encourage personal character development and enhance non-technical competencies of veterinary students and faculty members. Through a number of techniques including experiential learning and small group team work, participants discover the significance of concepts such as Servant-Leadership, Emotional Intelligence and communication skills. The VLE inspires veterinary students to live into the possibility of their goals, and to become leaders in the veterinary industry and their greater community.

Developed and launched in 2004 by Dr Rick de Bowes and Dr Kathy Ruby in conjunction with Washington State University, the VLE has been held every year in both the USA and numerous other countries across the globe. The full VLE program runs for five days, however shorter programs have also been conducted with similar success.

In 2008, Hill's Pet Nutrition held a 4 day Australasian VLE which was open to students, academics and practitioners. The event helped introduce Australasian veterinary students and professionals to the concepts of the VLE and created an opportunity for personal development, networking and friendship. Currently, there are no plans for any further (inter)national VLE programs, however there is an opportunity to help establish such an event on an annual basis.

Currently, many Australian universities, including The University of Queensland (UQ), are actively incorporating elements of the VLE program into the Veterinary Science curriculum. VLE is an especially useful way of setting a positive tone for students commencing their veterinary studies, and the UQ orientation program now includes a one-day VLE at the Gatton campus. Hill’s Pet Nutrition has been pivotal in ensuring Australian veterinary students have the opportunity to participate in the VLE program.

Undoubtedly, VLE is helping to positively shape the future of our veterinary profession and the program is likely to play an even bigger role in the curriculum of Veterinary Science over the coming years.